Massachusetts Bay Transportation Authority

Project Narrative

Haverhill Double Track Project

FY 2024–2025 National Railroad Partnership Program For Projects Not Located on the Northeast Corridor

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I. COVER PAGE

Below, **Table 1** lists elements as required by the Federal Railroad Administration's (FRA) Notice of Funding Opportunity (NOFO) for the FY 2024–2025 National Railroad Partnership Program for Projects not located on the Northeast Corridor.

Table 1. Basic Project Information

Project Title	Haverhill Double-Track Project
Lead Applicant Name	Massachusetts Bay Transportation Authority (MBTA)
Joint Applicant Name	N/A
Amount of National Railroad Partnership Program funding requested	$139,600,000
Amount of proposed non-Federal share	$34,900,000
Source(s) of proposed non-Federal share	MBTA Revenue Bonds
Amount of other Federal funding, if applicable	N/A
Source(s) of other Federal funding, if applicable	N/A
Total Project Cost	$174,500,000
Capital Cost Estimate **All costs and the value of any resources needed to complete the Project Development, Final Design, and Construction stages of a capital project**	$174,500,000
Total cost by Lifecycle Stage(s) for which funding is requested under this NOFO (list each Lifecycle Stage and cost separately)	Project Admin & Management | All: $11,250,000 Final Design | Implementation: $17,500,000 Construction | Implementation: $174,500,000
Is right of way acquisition (ROW) part of this funding request? (Please provide funding request associated with ROW).	No ROW is required to facilitate construction
City(ies), State(s) where the project is located	Andover, Tewksbury, Wilmington, Reading, and Wakefield, Massachusetts
Congressional District(s) where the project is located	6th District of Massachusetts (MA-6)
Geospatial data for project location(s) in decimal degrees (with at least five decimal places of precision). If a track segment or corridor, provide start and end point data.	Northern limit: 42.659806°, -71.144000° Southern limit: 42.501806°, -71.075250°
Current Lifecycle Stage of project at time of application	Development Stage, Project Development
Anticipated completion date of current Lifecycle Stage	April 2027
Application Lifecycle Stage(s) proposed to be funded by the National Railroad Partnership Program	Implementation Stages, Final Design and Construction

Existing Intercity Passenger Rail service(s) on routes not more than 750 miles benefiting from the project	Amtrak's Downeaster, providing passenger service on a 146-mile route between Boston, Massachusetts and Brunswick, Maine will directly benefit from the Project.
If applicable, existing Long-Distance service(s) (routes greater than 750 miles) benefiting from the project	Not applicable
If applicable, existing Commuter Rail service(s) benefitting from the project	MBTA's Haverhill Line, a branch of the MBTA Commuter Rail system that runs north from Boston's North Station to Haverhill, Massachusetts.
If applicable, what Corridor, as identified in FY 2022 CID Selections, is benefitting from the project	Downeaster Corridor
Host Railroad/infrastructure owner(s) of project assets and property	MBTA
Other impacted Railroad(s)	CSX Transportation (Class I Freight)
Tenant Railroad(s), if applicable	Amtrak (Downeaster) CSX Transportation (Class I Freight)
If applicable, is a 49 U.S.C. 22905 compliant Railroad Agreement in place or pending?	N/A, MBTA (applicant) is owner of ROW.
LOI/PFA requested?	Not requested
If LOI requested for Projects in Project Development, provide amount of future request of Final Design/Construction request.	N/A
If PFA requested for Final Design and Construction:	N/A
(a) Provide amount of request under this NOFO for initial obligation.	N/A
(b) Provide amount of request under this NOFO for contingent commitment (equal to the remaining amount of the project cost).	N/A

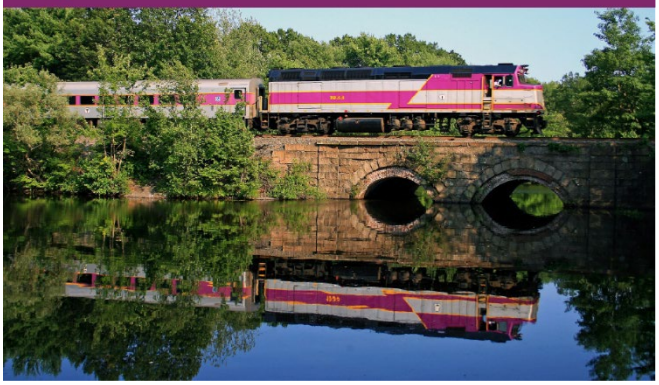
II. PROJECT SUMMARY

A. Organizational Overview

The Massachusetts Bay Transportation Authority (MBTA) is the largest transit provider in New England and the fourth largest in the country. The system serves more than 800,000 daily riders system-wide, and this number continues to grow. The service area encompasses two states and nearly 200 municipalities, serving them through a range of transportation options, including bus, Commuter Rail (CR), demand-responsive, ferry, heavy rail, light rail, and rapid bus services. In FY24, the MBTA provided more than 251 million Unlinked Passenger Trips (UPT) and covered 2.6 billion Passenger Miles Traveled (PMT). The MBTA operates or contracts service across seven modes: heavy and light rail, bus rapid transit, bus, CR (**Figure 1**), ferry, and paratransit. The total service area is made up of 177 communities, with impact extending across the 4.9-million-person Boston Metropolitan Statistical Area.

The MBTA system is integral to Boston's transportation network, economy, and urban systems. In Boston, 55 percent of all work trips and 42 percent of all trips into downtown are made by transit. With nearly 400 route miles and 141 stations, the MBTA's CR system is a lifeline for the region, providing congestion relief and access to jobs for thousands of individuals daily. As the nation's fifth-busiest rail system, MBTA CR serves nearly 90,000 passengers on weekdays.

Figure 1. MBTA Commuter Rail



Source: MBTA

B. Proposed Project and Scope of Work

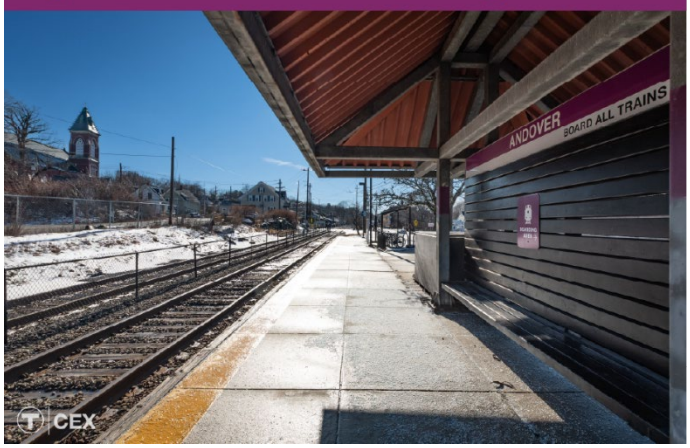
The MBTA Haverhill Double-Track Project (Project) is a safety and capacity enhancement project designed to improve reliability, operational flexibility, and safety along the MBTA's Haverhill CR right-of-way (ROW), a critical corridor serving MBTA's Haverhill CR service, Amtrak Downeaster intercity passenger rail (IPR) service, and Class I Freight rail operated by CSX Transportation (CSX). This mix of commuter, intercity, and freight traffic on primarily single-track infrastructure requires careful scheduling and coordination. The MBTA is requesting National Railroad Partnership Program funding to advance the Project through Final Design and Construction. MBTA is owner and host railroad of the Haverhill Line, which carries Amtrak's Downeaster intercity passenger rail service and CSX freight operations. The Project take place entirely on MBTA-owned ROW, directly improving the performance and reliability of intercity passenger rail.

The Project addresses the operational challenges posed by two existing single-track bottlenecks constraining service and efficiency of the rail network. The Haverhill Line includes eight miles of single track that limit operations along the 33-mile corridor. The Project will add two segments of double-track along an 11-mile section from Reading, Massachusetts to Andover, Massachusetts.

As documented in FRA's Project Specific Terms and Conditions (**Appendix A),** the Project will be executed with a two-phased scope:

- **Phase 1:**
  - Construction of approximately 0.28-mile of a second track from Lowell Junction through Ballardvale Station adjacent to the existing single track.
  - Construction of a new righthand #15 crossover at Lowell Junction to allow freight traffic from the Lowell Branch to access either track on the Haverhill Line.
  - Addition of two high-level platforms at both Ballardvale and Andover Stations (**Figure 2**).
  - Elimination of FRA at-grade rail crossing No. 053009H.
  - Modernization of signaling systems at two at-grade rail crossings.
- **Phase 2:**
  - Construction of approximately 6.5 miles of a second track from Reading to Wilmington Junction.
  - Addition of two high-level platforms at both Reading and North Wilmington stations.
  - Modernization of signaling systems at 13 at-grade rail crossings.

Figure 2. Andover Station Existing Conditions



Source: MBTA

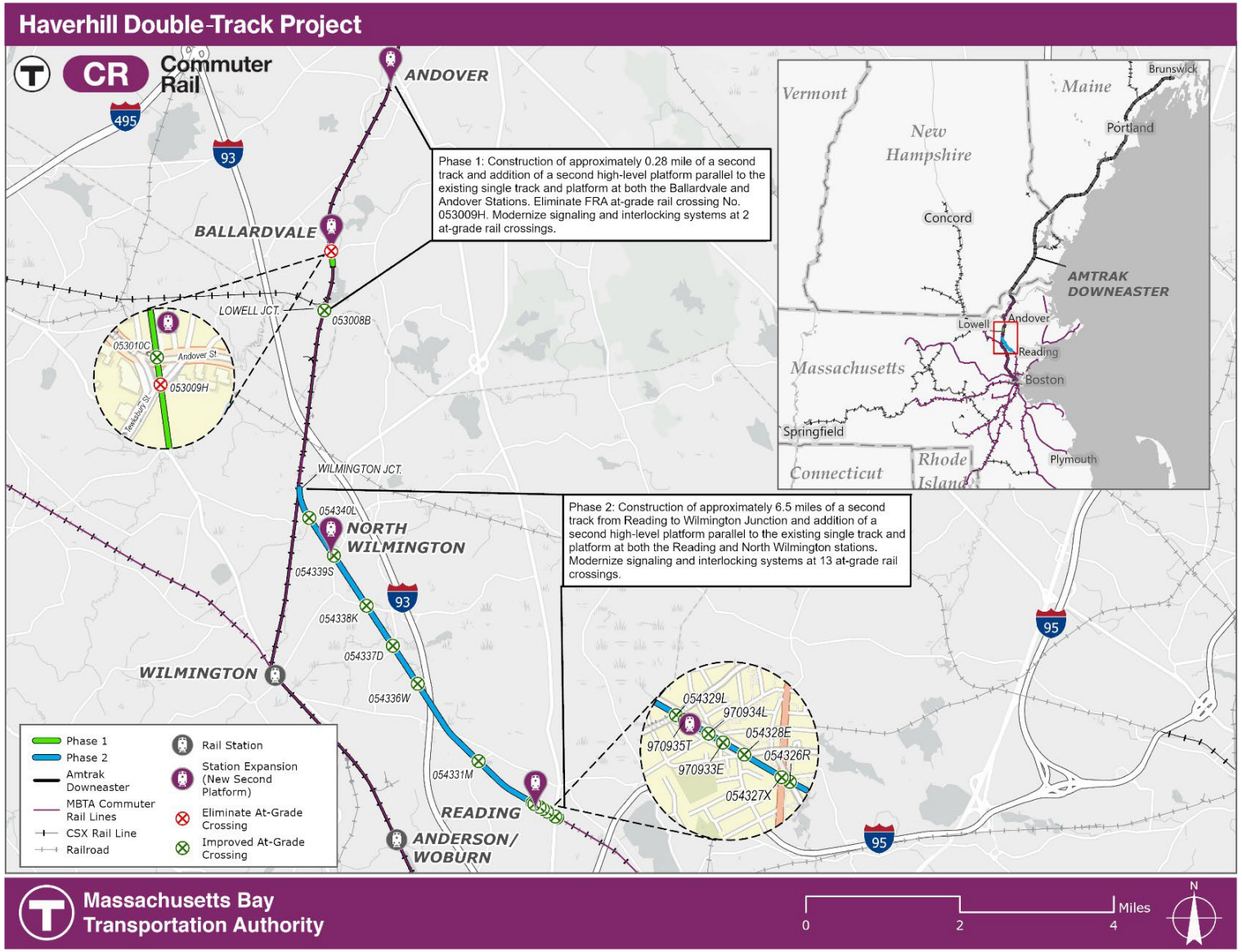
Details of the two-phased approach to the Project are illustrated on **Figure 3.** The primary goal of the Project is to increase reliability of IPR service by adding capacity through double-tracking of single-track bottlenecks. The Project will provide increased capacity and reliability for all users of the line (Amtrak, CSX, and MBTA).

C. ADA Compliance and Accessibility Alignment

Each new platform being constructed at Andover, Reading, Ballardvale, and North Wilmington will be designed to be fully accessible to customers with disabilities. Platform lengths will vary between stations but will be long enough to provide level boarding to all open doors of trains serving the station. All customers, including those requiring stair free access, will board and exit the train using the same platform. Furthermore, operational protocols will be established to ensure customers can access any open car of their choosing.

This application also seeks funding to improve the existing mini-high level platforms serving Andover, Reading, and Ballardvale to ensure level boarding is provided to all open cars of the train in both directions of travel. (The existing platform at North Wellington was recently constructed to achieve this goal.)

Figure 3. Project Location Overview Map



For all platform designs, the MBTA will seek FTA concurrence with the designs prior to moving to construction. Additionally, paths of travel impacted by changes to at grade crossings will be rebuilt to be fully compliant with ADA, state and internal accessibility standards.

III. GRANT FUNDS, SOURCES, AND USE OF PROJECT FUNDS

The MBTA is requesting $139.6 million in FRA National Railroad Partnership Program funding for final design and construction of the Project**, which will be matched by $34.9 million (20 percent) in local funding through MBTA revenue bonds** (**Table 2**)**.** MBTA revenue bonds are reliable, structured, and market-accepted, enabling long-term investment in maintenance and modernization of MBTA's infrastructure. The MBTA uses revenue bonds to finance capital investment within the five-year Capital Investment Plan (CIP). The CIP is a rolling five-year capital budget shaped by carefully weighing the costs and benefits of proposed projects. There are two overarching focus areas for capital projects: (1) reliability and modernization, and (2) expansion.

The MBTA is well-positioned to secure the matching funds required for the proposed Project through multiple established mechanisms. One such mechanism is the previously described revenue bond process, which has been successfully utilized to support comparable capital investments.

In addition, MBTA may leverage support from the Federal Funds and Infrastructure Office (FFIO), a key statewide resource responsible for ensuring that Massachusetts fully capitalizes on the unprecedented level of federal funding currently available. FFIO plays a critical coordinating role in aligning state, regional, and federal priorities and in providing matching funds necessary to advance federally awarded projects. MBTA maintains a strong record of collaboration with FFIO and has previously received FFIO funding to satisfy match requirements for awarded federal grants. This demonstrated history of successful partnership, combined with MBTA's strong institutional standing and financial stewardship, underscores the agency's capacity to secure the necessary matching funds and advance the proposed Project without undue financial risk.

The Project is situated within the MBTA's Rail Modernization Program and under the current SFY 2026-2030 CIP is included as "Rail Modernization – Early Action Items (P0940)", which features more than $35 million of FY26-30 programmed spending for design and construction of early action upgrades for power, track, stations, and accessibility on several MBTA CR lines, including the Haverhill Line. Inclusion in the MBTA CIP demonstrates the MBTA's commitment to enhancing the Rail Modernization Program.

A detailed capital cost estimate is provided in the Benefit-Cost Analysis (BCA) Workbook. $139.6 million of National Railroad Partnership Program funding enables the MBTA to allocate $34.9 million towards the Project's Phase 1 and 2 final design and construction activities. The need for National Railroad Partnership Program funding is critical to significantly improving American passenger rail assets.

Table 2. Project Funding Overview

Task #	Task Name/Project Component and Lifecycle Stage	Cost	Percentage of Total Cost	Source of Funds and Citation, as applicable
1.	Project Administration and Management / All	$11,250,000	**6%**	**MBTA Revenue Bonds**
2.	Final Design / Implementation	$17,500,000	**10%**	**MBTA Revenue Bonds**
3.	Construction / Implementation	$145,750,000	**84%**	**National Railroad Partnership Program (80%)**
				MBTA Revenue Bonds (4%)
Total Project Cost		**$174,500,000**	**100%**	
Federal National Railroad Partnership Program funding requested in this application		**$139,600,000**	**80%**	**National Railroad Partnership Program**
Non-Federal Funding (State)		**$34,900,000**	**20%**	**MBTA Revenue Bonds**

A. Non-Federal Funding Availability

Non-Federal funds are currently available for the project; the MBTA will use funds from revenue bonds for the 20 percent non-Federal local match (**Table 3**).

Table 3. Project Budget Sources and Uses

Task	Federal Funds ($)	Federal Funds (%)	Non-Federal Funds ($)	Non-Federal Funds (%)	Total
Task 1. Project Administration and Management/All	$9,000,000	80%	$2,250,000	20%	$11,250,000
Task 2: Final Design/Implementation	$14,000,000	80%	$3,500,000	20%	$17,500,000
Task 3: Construction/ Implementation	$116,600,000	80%	$29,150,000	20%	$145,750,000
Total	**$139,600,000**	**80%**	**$34,900,000**	**20%**	**$174,500,000**

B. Obligation Constraints

- The MBTA's requested Federal funding is not constrained by other Federal or non-Federal funding programs' obligation requirements.
- Funds for the Project do not have requirements to be spent by a certain date due to dependencies or relationships with other Federal or non-Federal funding sources, related projects, law, or other factors.
- The MBTA does not anticipate securing financing for the Project.

IV. APPLICANT ELIGIBILITY CRITERIA

The MBTA is the sole applicant for the FRA's National Railroad Partnership Program funding request. The MBTA is a public agency and publicly chartered authority established by the Commonwealth of Massachusetts and is also a political subdivision of the Commonwealth of Massachusetts organized under Section 2 of Chapter 161A of the Massachusetts General Laws. The applicant meets the Eligible Applicant criteria as a public agency established by a State and a political subdivision of a State.

Figure 4. MBTA Commuter Rail

Source: MBTA

V. PROJECT ELIGIBILITY CRITERIA

This Project fully meets all eligibility requirements of the National Railroad Partnership Program requirements as outlined in Section 3(d) of the NOFO. The Project meets the requirements from 49 U.S.C. 24911(c) as presented in **Table 4**.

Table 4. Project Eligibility

Eligible Projects	How the Project Meets the Requirement
(i.) A project to replace, rehabilitate, or repair infrastructure, equipment, or a facility used for providing intercity passenger rail service to bring such assets into a State of Good Repair.	Eliminates single-track bottlenecks, adds second high-level platforms, improves rail crossings, and removes a high-risk at-grade crossing.
(ii.) A project to improve intercity passenger rail service performance, including reduced trip times, increased train frequencies, higher operating speeds, improved reliability, expanded capacity, reduced congestion, electrification, and other improvements, as determined by the Secretary.	Removes a major source of delay caused by single-track bottlenecks, enhancing reliability for Amtrak and MBTA passenger service.
(v.) The planning, environmental studies, and Final Design for a project or group of projects described in paragraphs (i) through (iv).	Includes final design and construction activities necessary to eliminate single-track bottlenecks, station platform expansions, rail crossing improvements, and removing a high-risk at-grade crossing.

With National Railroad Partnership Program funding, the MBTA will advance the Project through Final Design and Construction, completing all Implementation-stage tasks necessary to deliver

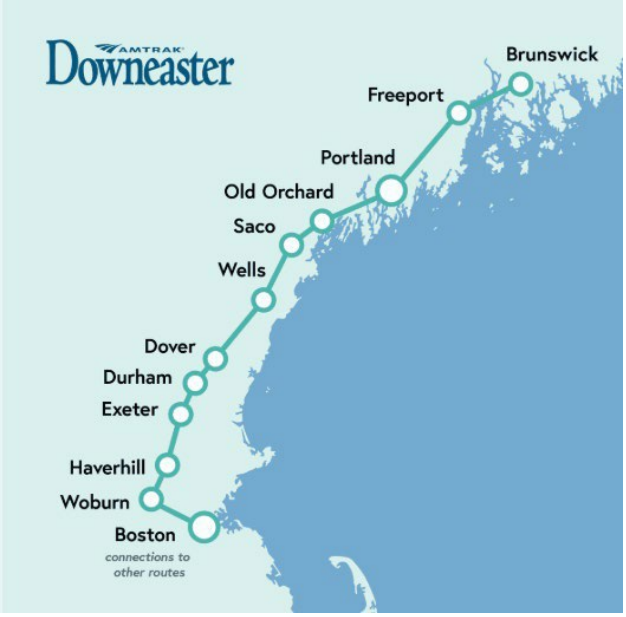
the improvements. Upon completion, the Project will achieve the following outcomes consistent with National Railroad Partnership Program NOFO eligibility criteria:

- **Rehabilitation of Existing Infrastructure:** The Project will restore and upgrade critical rail assets to a state of good repair, addressing infrastructure that is not adequate for current and future capacity along approximately seven miles of IPR corridor that currently constrains reliability and performance.
- **Enhanced Service Performance:** Improvements will reduce trip times, allow for higher operating speeds, and improve overall reliability (**Table 5**). By eliminating single-track bottlenecks and expanding capacity, the Project will reduce congestion and enable more efficient operations for IPR services, as demonstrated with quantifiable data throughout this Project Narrative and the Project's BCA.

VI. CORRIDOR IDENTIFICATION AND DEVELOPMENT PROGRAM COORDINATION

The Northern New England Passenger Rail Authority (NNEPRA) is the Corridor Identification and Development (CID) Program sponsor for the Downeaster Corridor. NNEPRA oversees Amtrak's Downeaster IPR service, which operates over MBTA-owned ROW, including the Haverhill Line within Project limits (**Figure 5**). The Downeaster corridor has been accepted into the CID Program, having completed Step 1 (Corridor Identification) and is now beginning Step 2 (Service Development Planning). Corridor Identification documentation is attached in **Appendix B**. NNEPRA started an update to the Downeaster Service Development Plan (SDP) in 2023, in coordination with the Maine Department of Transportation and Amtrak, to evaluate infrastructure needs, service levels, and opportunities for multimodal connectivity along the corridor.

Figure 5. NNEPRA, Downeaster Corridor, Amtrak



The Project aligns fully with the CID planning framework and does not preclude any outcomes from CID activities. Instead, it complements CID objectives, addressing capacity constraints and reliability improvements identified in NNEPRA's Strategic Initiatives and Maine State Rail Plan. The Project's enhancements, such as developing a second track, station capacity upgrades, eliminating an at-grade crossing, and the modernization of interlocking systems along the corridor, are essential to achieving the long-term vision for expanded and more frequent Downeaster service.

NNEPRA is a public authority established under Maine statute with full authority to fund and manage passenger rail service. For over 20 years, it has successfully delivered federally funded projects, including major infrastructure upgrades, station improvements, and service expansions. NNEPRA's Board of Directors and experienced staff oversee compliance, project delivery, and operational performance. The Downeaster Corridor connects rural Maine and New Hampshire communities to Boston and the national rail network, providing access to jobs, education, and healthcare. The Project will reduce travel time, improve reliability, and enhance multimodal connectivity, delivering significant economic, environmental, and safety benefits across the system.

The Project has strong CID stakeholder support, as demonstrated by letters of support (**Appendix C**) for this funding application from Amtrak, NNEPRA, CSX, the Massachusetts Department of Transportation (MassDOT), and various municipalities supported by Amtrak Downeaster Service. NNEPRA conducts regular station community meetings and will continue providing updates on the Haverhill Project as part of the SDP process.

VII. DETAILED PROJECT DESCRIPTION

A. Project Scope

The Haverhill Double-Track Project is a safety and capacity enhancement initiative designed to improve reliability, operational flexibility, and safety along the MBTA's Haverhill Line, a critical corridor serving IPR (Amtrak), MBTA CR, and freight operations (CSX). The Project addresses challenges posed by the two existing single-track bottlenecks that constrain capacity and operational efficiency (**Figure 3**). The Project will be executed with a two-phased scope, Project funding allocated by scope task is documented in **Table 2**.

- **Phase 1** includes the final design and construction of a second track from Lowell Junction through Ballardvale Station and the addition of a high-level second platform at both Ballardvale and Andover stations.
- **Phase 2** includes the final design and construction of a second track from Reading to Wilmington Junction and the addition of a high-level second platform that serve all active doors of the train at both Reading and North Wilmington stations.

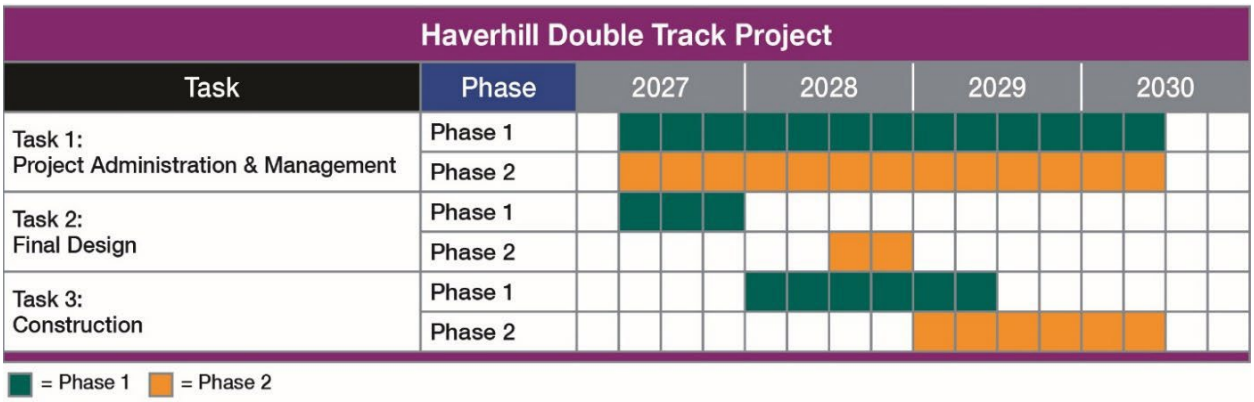
In addition to the second track, the Project will eliminate an at-grade rail-roadway crossing (FRA Crossing No. 053009H, Tewksbury Street) and modernize signaling and interlocking systems at 15 at-grade rail crossings (FRA Crossing No. 054326R, 054327X, 970933E, 054328E, 970934L, 970935T, 054329L, 054331M, 054336W, 054337D, 054338K, 054339S, 054340L, 053008B, 053010C). The primary goal of the Project is to increase reliability by adding capacity through double-tracking of single-track bottlenecks. The Project will provide increased capacity and reliability for all users of the line (Amtrak, CSX, and MBTA).

B. Project Schedule and Lifecycle Staging

Figure 6 illustrates the schedule for Project phases moving forward. Phase 1 (Ballardvale to Andover Station) is currently in implementation stages, with final design expected to be complete in December 2027. Phase 2 (Reading to Wilmington Junction) is currently in development stages, with project development expected to be complete in December 2026. The

National Railroad Partnership Program funds will be used to support implementation stages work for final design and construction. Without grant funding, Project construction would be significantly delayed.

Figure 6. Project Schedule



C. Transportation Challenges

The objective of the Project is to increase safety and reliability of the MBTA's operations and increase operational capacity for all users of the MBTA's rail line (MBTA, Amtrak, and CSX). The Project constructs the necessary rail infrastructure to enable the MBTA to meet these objectives, addressing the challenges posed by infrastructure gaps in critical infrastructure required to support safe and efficient rail transport of people and goods.

i. Additional Background on Transportation Challenges Project Aims to Address

The Project directly addresses several longstanding transportation challenges that constrain reliability, limit operational flexibility, and degrade overall passenger and freight performance along the MBTA Haverhill Line and the shared Amtrak Downeaster corridor. These challenges stem from legacy single-track segments, aging infrastructure, limited station capacity, and outdated signal and interlocking systems that collectively create recurring delay patterns and narrow the corridor's ability to meet current and future demand. Illustrated in **Figure 7**, the Project is specifically designed to resolve these persistent issues by adding double-track capacity, enhancing station infrastructure, modernizing signal systems, and eliminating safety hazards. Together, these improvements will strengthen corridor resilience, reduce travel times, improve on-time performance, and create a more reliable and passenger-focused rail system supporting local, regional, and intercity mobility needs.

Figure 7. Transportation Challenges Resolved by the Project

Transportation Challenge	Summary of Issues	How the Project Addresses Them
Safety and Access Control	• Manual signal interventions and long gate-down times create safety and traffic concerns. • Massachusetts ranks among the highest nationally for trespassing and rail-related suicides.	• Double-track reduces queuing at crossings and associated safety risks. • New fencing at stations and along the ROW deters unauthorized access.
Operational Flexibility and Reliability	• Trains must wait at passing sidings for opposing traffic. • No ability for trains to overtake stopped or slower services. • Frequent switch movements create wear and reliability issues. • In 2025, the Haverhill Line recorded a single-day low of 60% reliability during peak hours and 68% during off-peak hours, meaning many trains arrived more than five minutes late.[1]	• Continuous double-track allows bi-directional flow without delays. • Enables overtakes, improving schedule adherence. • Reduces switch movements, lowering maintenance and improving reliability.
Capacity Limitations	• Current configuration does not support long-term growth. • Off-peak trains currently run every 90–120 minutes, limiting options and reducing appeal of rail.	• Added track increases corridor capacity and offers foundation for future expansion (subject to rolling stock and system upgrades).
Maintenance-Related Service Disruptions	• Maintenance on single-track segments often requires bus substitutions, causing confusion and delays.	• Double-track greatly reduces need to replace train service with buses during maintenance, improving continuity for riders.
Shared Corridor Bottlenecks	• MBTA, Amtrak Downeaster, and CSX share the line, creating congestion and delay points. • Major choke points (i.e. Reading-Wilmington Junction) limit capacity. • FRA reported 3,576 minutes of Downeaster delays in FY2025 Q4 due to passenger train interference on this shared corridor.[2]	• Additional track alleviates bottlenecks and reduces conflicts among operators, improving reliability across all services

1 *MBTA CR Reliability Data*

2 *FRA FY25 Q4 Performance and Service Quality Report for Intercity Passenger Rail*

D. Current and Proposed Railroad Operations

Currently, 10 IPR trains and 28 MBTA CR trains use this segment of railway every week. That number is not anticipated to change with construction of the Project.

E. Project Users & Beneficiaries

The beneficiaries of this Project and its resulting improvements include these agencies, as well as MassDOT, which has an interest in promoting intercity rail travel and enhancing the state's economic ties along the Downeaster line. All communities with MBTA CR stations along the Downeaster between Boston, Massachusetts, and Brunswick, Maine, will also benefit from this Project.

i. Direct Users, Local & Regional Beneficiaries, National Beneficiaries

The Project directly benefits all users of the corridor and delivers positive local, regional, and national impacts without introducing any adverse safety effects. By eliminating single-track bottlenecks, modernizing signaling systems, removing a high-risk at-grade crossing, and providing station capacity upgrades, the Project enhances the safety, reliability, and operational flexibility of one of the most important mixed-traffic rail corridors in Massachusetts. All paths of travel impacted by changes to at-grade crossings will be rebuilt to be fully compliant with ADA, state, and internal accessibility standards. The resulting benefits extend to intercity passengers, commuter rail riders, freight customers, local communities, and the broader national rail network. These relationships are summarized in **Figure 8**.

Figure 8. Project Benefits and Beneficiaries

Rail User Group	Primary Benefits	Beneficiaries
Intercity Passenger Northern New England Passenger Rail Authority (NNEPRA); Amtrak	• Supports anticipated Downeaster service expansion • Improves on-time performance by eliminating single track conflicts • Increases schedule reliability on a shared national rail corridor	**Downeaster Passengers** • Amtrak Downeaster Passengers traveling between Maine, New Hampshire, and Boston. For FY 2025, the Amtrak Downeaster carried approximately 549,120 passengers • Commuters accessing Boston's job market • Students travelling to prominent New England academic institutions and their local satellite programs • Tourism-dependent communities along the Downeaster corridor
Freight CSX Transportation	• Reduces freight interference with passenger rail operations • Improves network fluidity and operational flexibility • Strengthens supply chain reliability along a key New England freight corridor	**Freight Shippers and Regional Businesses** • Sappi North America which operates paper mills in Westbrook and Skowhegan, Maine plans on increasing its use of rail carried by CSX on the shared corridor • Freight shippers, with commodities largely composed of lumber, chemicals, and food products • Logistics and distribution centers in Merrimack Valley, southern New Hampshire, and northern Massachusetts • Supply chain operators moving goods to/from Boston and the wider New England region
Regional Massachusetts Bay Transportation Authority (MBTA); Keolis	• Eliminates rail bottlenecks and single-track constraints • Improves resiliency, safety, and operational flexibility • Reduces travel times and recovery margins	**MBTA Rail Passengers** • MBTA Haverhill Line Commuter Rail Riders • Workers commuting to downtown Boston and intermediate job centers (e.g., Andover, Lawrence) • Low and moderate-income riders who depend on commuter rail as an affordable alternative to driving • Keolis operations staff (dispatchers, engineers, maintenance crews) who benefit from reduced congestion and schedule recovery margin pressures

F. Project Outcomes

Rail improvements will eliminate the barriers to higher capacity and make this line a more valuable asset for the communities it serves. As documented in **Table 5**, additional benefits of the Project include:

- **Improved Reliability:** Removes bottlenecks, reducing cascading delays and improving on-time performance for both MBTA and Amtrak services.
- **Capacity Expansion:** Supports more trains in both directions, accommodating future growth and intercity service needs.
- **Safety Enhancements:** Fewer instances of trains idling near crossings, elimination of FRA Crossing No. 053009H, and less manual signal intervention by modernizing signal systems at 15 at-grade crossings improves operational safety.

Table 5. Project Outcomes

Ridership in the Project Area		
	No Build Scenario (2024)	**Build Scenario (2030)**
Total Annual Ridership	**2,263,834**	**2,475,374**
Annual Intercity Passenger Rail (IPR) Ridership	593,302	648,742
Annual Commuter Passenger Rail (CR) Ridership	1,670,532	1,826,632
Train Counts in the Project Area		
	No Build Scenario (2024)	**Build Scenario (2030)**
Total Weekly Trains	**376**	**508**
Weekly Intercity Passenger Rail (IPR) Trains	70	84
Weekly Commuter Rail (CR) Trains	252	370
Weekly Freight Trains	54	54 *(No Direct Change)*

Operating Speeds in the Length of Track Improvement Area						
	No Build, IPR	**Build, IPR**	**No Build, CR**	**Build, CR**	**No Build, Freight**	**Build, Freight**
Average Operating Speed (mph)	26.7 mph[1]	Note 3	32.9 mph[2]	Note 3	20.0 mph	Note 3
Highest Maximum Authorized Speed (mph)	79 mph	Note 3	79 mph	Note 3	40 mph	Note 3
Lowest Maximum Authorized Speed (mph)	30 mph	Note 3	30 mph	Note 3	15 mph	Note 3
Average Scheduled Travel Time (Time/Trip)	1 hr. 14 mins[1]	Note 3	42 mins[2]	Note 3	N/A	N/A

1 North Station to Haverhill Station

2 Haverhill Station to Wakefield Station

3 Approximately the same value as the No Build scenario.

Growth rate is derived from regional planning documentation. Additional details are provided in the BCA Technical Memorandum in the Appendix. Source: MBTA, Amtrak, CSX

VIII. SAFETY BENEFIT DATA

As documented in the BCA Technical Memorandum submitted with this funding request, the Project will reduce the risk of crashes by eliminating the Tewksbury at-grade rail crossing. The BCA quantifies the safety impacts of eliminating the Tewksbury at-grade rail crossing as well as improvements made to 15 at-grade rail crossings along the corridor. The FRA estimates the annual average number of predicted accidents at this crossing as 0.025666. The cost of these accidents is estimated using a per-crash weighted average value of U.S. Department of Transportation (USDOT) parameters for possible crash injury, crash injury, and crash fatality. The per-crash value was applied to the annual average number of predicted crashes to get the value of the safety benefit. The monetized safety benefit of the Project, as quantified in the BCA, was $150,399.

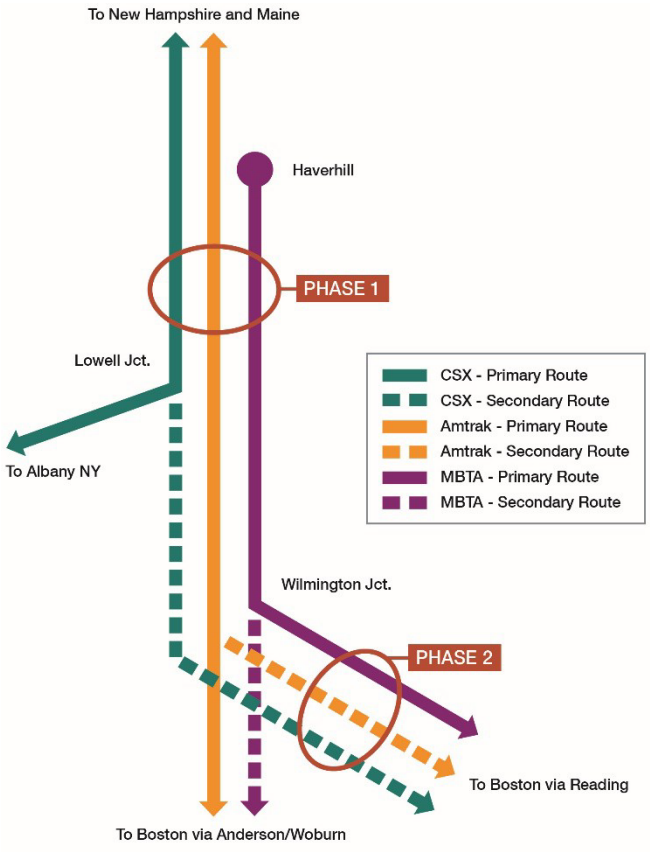
In addition to the quantifiable crash-reduction benefits identified in the BCA, the Project will further enhance system safety by reducing trespassing and preventing intentional self-harm incidents along the rail corridor. FRA data show that nearly one-third of all rail-related fatalities nationwide result from intentional acts of suicide and that Massachusetts recorded the seventh highest number of suicides by rail from 2020 to 2024, underscoring the need for measures that restrict access to the ROW. The Project's installation of new safety fencing and access-control features will limit unauthorized entry, deter unsafe behavior, and provide an effective barrier aligned with FRA's suicide and trespass prevention strategies. These improvements will strengthen overall corridor safety by protecting vulnerable individuals, reducing traumatic incidents for railroad personnel and travelers, and minimizing service disruptions associated with person-train events, reinforcing FRA's safety priorities.

IX. PROJECT LOCATION

The Project is located within the Boston, MA-NH 2020 Census Designated Urban Area and spans five municipalities: Andover, Reading, Tewksbury, Wakefield, and Wilmington in Massachusetts. It lies within Massachusetts' U.S. Congressional District 6. The Project's northern limit is at 42.659806°, -71.144000°, and its southern limit is at 42.501806°, -71.075250°, as shown in **Figure 3**.

Illustrated in **Figure 9**, the Haverhill Line is part of the MBTA CR system, which

Figure 9. Project Service Planning Map



links northern Massachusetts communities to Boston and connects with Amtrak's Downeaster service to New Hampshire and Maine. Improving this corridor supports seamless travel across state lines and reinforces Boston's role as a regional hub. The Haverhill Line is also used by CSX and will enhance their Class I freight service across the region.

Appendix D documents the 15 at-grade crossings to be improved and the one at-grade rail crossing that will be eliminated as part of the Project scope. The improved and closed at-grade crossings are not specifically referenced in the 2022 MassDOT Highway-Rail Grade Crossing Action Plan; however, the Project's improvements and closure of at-grade crossings within the Project limits directly support multiple objectives of the 2022 MassDOT Highway-Rail Grade Crossing Action Plan by addressing safety, risk reduction, and system efficiencies.

X. EVALUATION AND SELECTION CRITERIA

A. Project Readiness

Figure 6 illustrates the schedule for all Project elements moving forward. Phase 1 (Ballardvale to Andover Station) is currently in implementation stages, with final design expected to be completed in December 2027. Phase 2 (Reading to Wilmington Junction) is currently in development stages, with Project development expected to be completed in December 2026. Train movements through existing corridor segments will be accommodated during construction. Easements from private property owners will be secured during final design as required. The MBTA does not anticipate any barriers that would delay or prevent Project delivery.

i. Environmental Readiness

The National Environmental Policy Act (NEPA) Class of Action is currently undetermined. In January 2026, the Massachusetts Department of Transportation (MassDOT) submitted a letter to the FRA as a notification of project initiation (**Appendix E**). All Project work is anticipated to be within the Massachusetts Bay Transportation Authority (MBTA) right-of-way (ROW) on the former second-track roadbed. The Project is not anticipated to result in any unusual circumstances as defined in 23 CFR § 771.116(b)1-4. MBTA intends to seek a Categorical Exclusion (CE) from the NEPA in alignment with 23 CFR § 771.116(c)(12) due to the Project being a minor rail addition. Both Project phases will be documented under a single CE. In addition, the Project will complete consultations under Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act. Section 4(f) documentation is not anticipated as the Project is not expected to require any land acquisition. Additionally, no work in water is anticipated as part of the Project. The MBTA has an extensive history of executing similar projects promptly and without delay and so does not anticipate any challenges that will hinder the prompt completion of the NEPA process. The Project's environmental review process will be initiated in early 2026 and is targeted for completion in mid-2026. Environmental documentation will be submitted for approval in advance of the completion of the final design report and construction.

ii. Lifecycle Stage Summary

The two phases of the Project are in separate lifecycle stages. Phase 1 (Andover Station to Lowell Junction) is currently in the final design lifecycle stage, expected to be completed in December 2027. Phase 2 (Wilmington Junction to Reading Station) is currently in the project development lifecycle stage, expected to be completed in December 2026. Phase 2 will begin the final design lifecycle stage in January 2027.

iii. Project and Partner Coordination

The MBTA is the Project sponsor and is investing 100 percent of the non-Federal match for the Project. The MBTA has decades of experience with receipt and expenditure of Federal funds and is committed to improving operations and safety throughout our system. The Project has support from Amtrak, NNEPRA, Keolis, CSX, and others who rely upon the Haverhill and Downeaster Line. The MBTA regularly coordinates with its project partners, Federal Highway Administration (FHWA), and FRA regarding the development of the Haverhill Project and has ensured the Project's inclusion in relevant state and local plans.

iv. Status and Timeline of Agreements

As owner of the railroad ROW, the MBTA is not required to provide information about the status of agreements with infrastructure owners under 49 U.S.C. 22905(c)(1). The MBTA has initiated cooperation with users of the MBTA ROW (Amtrak and CSX) impacted by the Project and has their full support for the Project as demonstrated by the letters of support included with this application.

v. Financial Readiness

The MBTA is providing approximately $34.9 million in matching contributions, which constitutes 20 percent of the overall Project cost. This matching contribution will be made through MBTA revenue bonds. The MBTA acknowledges cost overruns will be the obligation of the MBTA. The MBTA has included a 25 percent contingency on construction costs in the budget to account for unforeseen circumstances that could arise during construction.

B. Technical Merit

The MBTA is sufficiently qualified to deliver a project of this scope and magnitude. The MBTA operates one of the largest and oldest transit systems in the United States, managing complex CR, subway, and bus networks. The agency has decades of experience delivering bridge replacements, track upgrades, and station improvements under challenging urban conditions. In FY 2022, the MBTA delivered capital program investments of nearly two billion dollars. As outlined in the FY 2023-2027 CIP, the MBTA has programmed $9.4 billion for over 550 capital projects over the next five years. Past projects have used Federal, State, and local funding sources. For example, in 2018, MassDOT secured an FTA Section 5390 New Starts Award of $996.12 million for the Green Line Extension Project, which was delivered by the MBTA. Past projects also include the Gloucester Drawbridge Replacement, a $100 million endeavor.

The MBTA is responsible for agency coordination and technical review of design development and has final approval authority over designs to ensure they meet the MBTA's Design Standards

and Guidelines. The Capital Delivery Department has implemented a variety of project management and control processes to ensure the successful delivery of complex projects, including procedures and policies for change orders, field inspections, project procurement, controls, management, and quality assurance. These best practices are described in detail in the Project Controls Manual. They will be employed throughout the life of the Project to ensure and enhance quality, timeliness, and cost-effectiveness. The Project will be fully compliant with requirements stipulated in the Build America, Buy America Act.

An integrated management approach will be used for this Project, involving all levels of management to ensure successful delivery. Led by an experienced Project Manager, the Project will be executed in accordance with the MBTA's Implementation Plan, to be filed with the FRA, made available on the Project website, and managed in accordance with the Project Management Plan to ensure successful orchestration of the Project's cost, schedule, and risk. The MBTA employs in-house engineers and partners with leading consultants for structural design and advanced construction methods, with a demonstrated ability to manage multi-million-dollar projects within strict timelines in full compliance with FRA requirements.

i. Project Scope

With this application, the MBTA has submitted a statement of work with an estimated Project schedule and Project budget that are reasonable and appropriate to achieve expected outcomes. The MBTA has demonstrated experience and is prepared to commit the necessary resources and workforce to deliver the Project (**Appendix F**).

ii. Qualifications and Experience of Key Personnel

The MBTA has extensive experience completing projects with similar scopes and has qualified personnel to handle the requirements of the final design and construction phases. The MBTA has robust operational, planning, and support teams in place and is well-versed in large scale planning and construction projects. **Appendix G** provides comprehensive details on the qualifications and relevant experience of the MBTA team.

- Michael Muller – Executive Director of Commuter Rail, MBTA
- Michael Rooks – Chief Railroad Officer, MBTA
- Anthony DeDominicis – Senior Director of Railroad Capital Programs, MBTA
- Robert Proulx – Director of Engineering and Maintenance, MBTA
- Brian Bethel – Director of Railroad Operations, MBTA
- Ryan Metcalf – Director of Positive Train Control, MBTA
- Dennis Soares – Director of Railroad Capital Planning and Finance, MBTA

iii. Private Sector Participation in Financing, Construction, or Operation of the Proposed Project

Private sector participation in the Project includes work on both construction and operations. The MBTA will use private contractors to deliver the physical improvements of the Project. Keolis, the MBTA's contracted operator, will continue operations, ensuring service continuity and benefits from enhanced infrastructure reliability.

iv. Legal, Financial, and Technical Capacity

The MBTA is the Project sponsor and lead applicant and has the legal, financial, and technical capacity to successfully carry out the Project. Funding and delivery of the Project will be the sole responsibility of the MBTA, and in its role as grant administrator, the MBTA will work closely with affected railroad operators and funding partners.

The MBTA brings decades of experience as the largest transit provider in New England and one of the largest in the nation. Its extensive multimodal network and experience managing complex operations across a vast service area demonstrate the expertise needed to complete this project. It plays a critical role in regional mobility and has served hundreds of thousands of riders daily, making the MBTA uniquely positioned to lead this initiative effectively and efficiently.

The MBTA maintains satisfactory continuing control over its equipment and facilities and has established policies and procedures to ensure compliance with all federal and state requirements. The MBTA has an annual capital program investment of approximately two billion dollars and robust financial accounting and audit controls to manage federal funds effectively. Over the past decade, the MBTA has expanded its capital programming and technical workforce, including project managers and engineering staff, to oversee complex infrastructure projects.

The MBTA has successfully administered billions of dollars in federal funding, including annual FTA formula funds, and $1.98 billion in COVID-19 relief funding. The MBTA has also administered various discretionary grant programs including FTA Passenger Ferry, Bus and Bus Facilities; FRA State of Good Repair; FRA CRISI; and FEMA Transit Security. This experience demonstrates the MBTA's capacity to remedy any noncompliance with project specifications or delivery deadlines with legal action. The MBTA's proven track record confirms its ability to complete this project and maintain the assets for their intended useful life.

v. Innovation

The Project incorporates an innovative and cost-effective construction method by repurposing recycled bridge deck materials (**Figure 10**) provided by MassDOT. These materials, salvaged from the former Central Artery highway during the "Big Dig" reconstruction program, will be used in the improved station platforms. This approach reduces waste, lowers materials costs, and reduces construction time. This recycling exemplifies environmental stewardship while preserving the structural integrity required for modern rail infrastructure. By integrating recycled components into new construction, the Project demonstrates a commitment to innovative practices that align with resiliency goals.

The Project also leverages an innovative public-private partnership between the MBTA and its contract operator, Keolis, to deliver improvements to its CR system. This collaboration combines the MBTA's extensive planning and oversight capabilities with Keolis' global expertise in operating rail systems, enabling the deployment of best practices and advanced technologies. By structuring the project through this partnership, the MBTA is using an innovative approach to project delivery, streamlining coordination, and optimizing resource utilization. This model also

introduces opportunities for shared investment strategies and operational efficiencies that enhance long-term cost-effectiveness.

Figure 10. Bridge Decks to be Repurposed as Station Platforms

Source: MBTA

vi. Consistency with Planning Guidance and Documents

The Project is part of the MBTA's Regional Rail Modernization Program, a service-focused initiative transforming existing MBTA CR into a significantly more productive regional rail service. The Regional Rail Modernization Program will increase service on all MBTA CR lines, improve scheduling, and shift the rail system from diesel power to electric power. Drawing on several years of stakeholder outreach and feedback, these changes will improve the rider experience, support economic growth, and advance social and environmental goals. The rail modernization plan began with the 2019 Rail Vision study, which identified cost-effective ways to transform the MBTA's existing CR system to better support mobility and economic competitiveness in Greater Boston.

The Project is consistent with the Commonwealth of Massachusetts's Long-Range Statewide Transportation Plan as it increases the safety, efficiency, and dependability of IPR service.

The Project supports the town of Andover's Essex Street Corridor plan. Andover received a $3.3 million MassWorks grant to enhance the Essex Street corridor, which is the primary pedestrian link between downtown, mixed-use areas, and the MBTA Haverhill Line Andover Station. Plans include widened sidewalks, bike lanes, intersection upgrades, and improved connectivity to the rail stop. Construction started in spring 2025. Improvements will aim to make the corridor more walkable, improve the safety of intersections along the route for all users, strengthen the connectivity between Downtown Andover and key destinations including the MBTA CR station and Historic Mill District, and support future housing development.

C. Project Benefits

As illustrated in **Figure 11,** the Project Benefits strongly align with the National Railroad Partnership Program benefit priorities as contained in 49 U.S.C. 24911(d)(2)(B).

Figure 11. Project Benefits

Haverhill Double-Track Project Benefits		
Improvements		Project Benefits in Alignment with 49 U.S.C. § 24911(d)(2)(B
	Construction of approximately **0.28 miles of second track** adjacent to the existing single track immediately south of Ballardvale Station.	Improves shared use corridor, removing single-track bottlenecks, allowing capacity and operational flexibility for both intercity passenger rail (Amtrak Downeaster) and MBTA CR services, supporting coordinated operations consistent with service and reliability objectives.
	Addition of **one high-level second platform** parallel to the existing single track platform at both Ballardvale and Andover stations.	Enhances station accessibility and safety for both intercity and CR passengers, improving the customer experience — especially for those with strollers, wheelchairs, and/or luggage — and endorsed by both Amtrak and the CR authority.
	Elimination of FRA at-grade rail crossing No. 053009H and modernization of signaling and interlocking systems at two at-grade rail crossings.	Reduces shared operational risk and improves corridor reliability for intercity and CR services by addressing safety constraints that affect both operators' schedules and on time performance.
	Construction of approximately **6.5 miles of second track** from Reading Station to Wilmington Junction.	Eliminates major single track bottlenecks on a corridor shared by intercity and CR, enabling coordinated service expansion and reliability improvements supported by both passenger rail operators.
	Addition of **one high-level second platform** parallel to the existing single track at both Reading and North Wilmington stations.	Promotes consistent station design standards and safe passenger access for both intercity and CR users, reflecting joint investment priorities for shared stations and facilities. Improves the customer experience, especially for those with strollers, wheelchairs, and/or luggage.
	Modernization of signaling and interlocking systems at 13 at-grade rail crossings.	Improves corridor wide signaling reliability and operational predictability for both intercity and CR services, supporting coordinated dispatching and infrastructure modernization.
	Installation of **new safety fencing** and access-control features limiting unauthorized entry.	Improves safety and operational reliability on a corridor shared by intercity passenger rail and CR services by reducing trespass incidents and service disruptions that affect both operators, supporting coordinated corridor management and risk reduction objectives. Deters unsafe behavior and provides an effective barrier aligned with FRA's suicide and trespass prevention strategies.

In addition to these benefits, there are economic benefits of the Project not monetized in the BCA supporting the intent of 49 U.S.C. § 24911(d)(2)(B) by delivering substantial positive economic and employment impacts.

Employment Impacts During Construction and Operations. The Project will create direct, indirect, and induced employment benefits across multiple phases:

- **Construction Phase:** The Project will support short- and medium-term jobs in construction, engineering, materials supply, inspection, and project management. These jobs are expected to draw from regional labor markets, including skilled trades.

- **Operations and Maintenance Phase:** Long-term employment will be generated through future anticipated expanded rail operations, station management, maintenance-of-way, customer services, and related support functions. These permanent positions contribute to sustained regional economic stability.

Collectively, these employment impacts align with congressional intent to prioritize projects that stimulate workforce participation and long-term economic resilience in rail-served communities.

Economic Development Near Passenger Stations. Improved passenger rail infrastructure and service reliability are anticipated to increase station-area accessibility and market attractiveness, producing catalytic development effects, including:

- Transit-oriented development (TOD) near stations
- Increased demand for retail, hospitality, and office space
- Higher utilization of existing properties
- Infill development and adaptive reuse of underutilized parcels
- Increased visitation to New England's historic downtowns and cultural assets
- Reinvestment in historic commercial buildings
- Preservation-oriented redevelopment enabled by improved accessibility
- Tourism-related economic activity tied to enhanced intercity mobility
- Enhanced rail service improves connectivity to employment centers, educational institutions, and regional destinations, which is a well-documented driver of private investment near passenger stations.
- Increased visitation to historic downtowns and cultural assets
- Preservation-oriented redevelopment enabled by improved accessibility
- Tourism-related economic activity tied to enhanced intercity mobility

Benefits to Underserved Areas. The Project is expected to:

- Improve access to employment and education opportunities for rural and urban residents
- Reduce transportation cost burdens
- Support equitable economic growth aligned with federal place-based investment
- Passenger rail infrastructure investments in these areas help reduce barriers to opportunity by linking residents to the broader regional labor markets and services available in Boston.

Induced and Regional Economic Effects. Beyond localized benefits, the MBTA's Project contributes to broader regional economic performance. These induced effects are consistent with federal priorities to fund projects that deliver long-term, systemwide economic returns:

- Enhancing freight–passenger network efficiency
- Improving travel time reliability for business and leisure travelers
- Supporting agglomeration economies across connected metropolitan areas
- Strengthening the overall competitiveness of rail-served corridors

D. Benefit-Cost Analysis

The BCA is based on Project-specific MBTA CR operations and safety data. The prepared BCA, comprised of a narrative memo and a model spreadsheet that shows all underlying calculations and assumptions, is attached as **Appendix H**. Following USDOT's Benefit-Cost Analysis Guidance for Discretionary Grant Programs, the model is expressed in constant 2024 dollars and discounts all benefits and costs to a 2024 base year using a seven percent real rate. It evaluates the Project over its useful life to produce a Benefit/Cost (B/C) ratio consistent with current USDOT grant application guidance.

The BCA indicates that the Project produces quantifiable benefits from safety improvements, travel time savings, and avoided delay and detour savings related to unscheduled maintenance. Based on the current scope, the resulting B/C ratio is 1.09, shown in **Table 6**. The BCA Workbook and Narrative detail the drivers of this result.

Table 6. Discounted Benefits and Costs for the Project

Project Benefits	Total (in millions)
Total Benefits	$116.1
Benefit 1: Safety- Grade Crossing Improvements	$1.3
Benefit 2: Travel Time Savings- Improved OTP	$22.3
Benefit 3: Transit Benefits- Station Amenities	$2.7
Benefit 4: Operations- Avoided Diversions	$18.5
Benefit 5: Other- Maintenance Savings	$8.0
Benefit 6: Other- Mode Shift	$63.3
plus Residual Value	$5.5
Net Benefits	**$121.6**
Total Costs	**$111.3**
B/C Ratio	**1.09**
Net Present Value	**$10.2**

E. Selection Criteria

i. Application Partnership

The sole applicant is the MBTA, with Project support from rail operation partners NNEPRA, Amtrak, and CSX.

ii. Improving Financial Performance, Reliability, Service Frequency, or Address the State of Good Repair of an Amtrak Route

Amtrak operates the Downeaster service on MBTA-owned ROW within the Project limits. The addition of a second track will eliminate single-track bottlenecks, significantly enhancing passenger and freight rail capacity for the MBTA, Amtrak, and CSX. These improvements reduce train delays and operational conflicts, resulting in better reliability, increased schedule

flexibility, and the ability to support more frequent service. At the same time, the Project modernizes aging infrastructure and advances the state of good repair, ensuring long-term resiliency and operational efficiency.

Financial Performance. The Project strengthens financial performance by creating opportunities for higher revenue and reducing long-term costs. Adding a second track enables the MBTA and Amtrak to operate more trains during peak and off-peak periods, which drives ridership growth and fare revenue. Improved reliability enhances customer satisfaction and retention, encouraging repeat travel and reducing cancellations. Modernized infrastructure, including upgraded signaling and interlocking systems, will lower maintenance costs and minimize service disruptions. Eliminating bottlenecks also reduces train meets, improving energy efficiency, and reducing wear-and-tear costs. These improvements make rail more competitive with other modes of transportation, attracting new riders and supporting regional economic development.

Reliability. The second track will significantly improve on-time performance by reducing conflicts between passenger and freight trains. By eliminating single-track constraints, the Project minimizes cascading delays and operational conflicts, ensuring more predictable and dependable service for both the MBTA and Amtrak customers. The Project has clear demonstrable benefits for public transportation passengers but there are also benefits for cars and trucks as a consequence of less congestion-related traffic delays. These reliability benefits occur because rising traffic congestion can increase collision rates and lead to longer traffic backups when there is a disabled vehicle or collision. By taking some cars off the road, public transportation enhancements can potentially reduce delays and increase reliability for all highway users including car, truck, and public transportation drivers and passengers.

State of Good Repair. The Project replaces aging infrastructure with modern components, including track, signaling, and interlocking systems, ensuring compliance with current standards and reducing lifecycle costs. The Project upgrades enhance safety, reliability, and operational efficiency, while keeping the system in a state of good repair.

iii. Consistency with Corridor Identification and Development Program

NNEPRA is the CID Program sponsor for the Downeaster Corridor, which was approved under FRA's CID Program pursuant to 49 USC 25101. The Downeaster passenger rail service, operated over MBTA-owned ROW, includes the Haverhill Line within the Project limits. The proposed improvements are consistent with the Downeaster Corridor Service Development Plan goals, specifically enhancing reliability through added track capacity and improving service efficiency.

iv. Safety

The permanent closure of the at-grade rail crossing at Tewksbury Street will remove a significant conflict point between rail and roadway traffic. This improvement will reduce the risk of collisions and improve overall operational safety. The addition of security fencing along the

perimeter of MBTA ROW will discourage and impede trespassing, yielding substantial safety benefits.

v. Workforce Development, Job Quality, and Wealth Creation

This Project presents an opportunity for the Federal government to invest in high-quality job creation by supporting good-paying, safe jobs. According to the American Public Transportation Association (APTA) multiplier, the Project will support approximately 2,268 jobs. The MBTA aims to retain, attract, and invest in a qualified workforce that represents their ridership.

The MBTA has made a number of achievements in alignment with workforce development goals in recent years, including securing a historic contract agreement with Local 589, which provides staff with wage increases, improved benefits, and job security. This contract agreement represents a keen awareness that the success of the MBTA relies on a strong and growing workforce. This contract helps to attract and retain more workers while offering good pay, benefits, and advancement opportunities. By providing employment opportunities through unionized labor, the Project contributes to job quality, workforce development, and economic health within the region.

The MBTA offers a range of programs to support the development of a skilled, local workforce, with opportunities to engage in partnerships, contracts, or procurement initiatives which can be explored through the MBTA website. The MBTA is committed to contributing positively to the local, regional, and national economy through significant capital investments. The MBTA prioritizes hiring individuals from the local area, creating community involvement and investment in the economic growth of the region. Complex and technical problems like the Haverhill Double-Track Project support the creation of good-paying and highly skilled jobs that are vital to the workforce in the greater Boston area.

vi. Enhancing the Experience of Traveling Families

Improved reliability and capacity of the Haverhill Line and Amtrak's Downeaster will make travel more convenient and predictable, which is especially beneficial for traveling families. When trains operate on consistent schedules with fewer delays, families can plan trips with confidence, reducing stress and uncertainty. Increased capacity provides more options for departure and arrival times, accommodating the needs of parents traveling with children or coordinating work and school schedules.

Station improvements at four Haverhill line stations (Reading, North Wilmington, Ballardvale, and Andover Stations) will include construction of high-level boarding platforms, which by design provide easier boarding with strollers, rolling bags and those family members using walkers and wheelchairs. The high-level platforms also help avoid bottlenecks in crowds during the boarding process, making it less stressful to travel with kids during busy seasonal travel times.

Together, these improvements create a more seamless travel experience, encouraging families to choose rail as their mode of transportation.

XI. PROJECT IMPLEMENTATION AND MANAGEMENT

A. Project Oversight and Contracting

i. Project Management Experience

The MBTA has implemented a variety of project management and control processes to ensure the successful delivery of complex projects. See the Technical Merit section for examples of past projects that have successfully utilized federal grant funding. Examples of analogous projects from the Authority's organizational history include:

- The MBTA's Track Improvement Program which removed more than 220 speed restrictions and replaced 250,000 feet of rail across the system.
- Worcester Union Station Improvements Project which enhanced the functionality and aesthetics of historic Worcester Union Station through upgrades such as a new third track, renovations to the station building, platform improvements, accessibility enhancements, and infrastructure updates to accommodate increased commuter traffic.
- Wollaston Station Improvement Project which modernized the infrastructure and amenities of Wollaston Station through renovations of the station's platforms, accessibility upgrades, improved pedestrian access, and enhanced safety features.

These projects demonstrate MBTA's extensive experience with managing transportation projects of this scale.

ii. Qualifications and Experience of Key Personnel

See "Technical Qualifications of Key Personnel" under the Technical Merit section for details about the technical qualifications and demonstrated experience of the MBTA. Details on the personnel proposed to lead and execute the Project have been attached to the Project Narrative as **Appendix G**.

B. Project Management Plan

As an FRA-funded capital project, the MBTA is prepared to develop and maintain a comprehensive Project Management Plan (PMP). In addition to the PMP, the MBTA has a significant number of project management and control processes in place to deliver a project of this scope. These best practices are described further in the MBTA's Project Controls Manual.

C. Assessment of Project Risks and Mitigation Strategies

The PMP is inclusive of a Risk & Contingency sub-plan, with documented risk registers, analysis processes, and mitigation strategies. The PMP incorporates risk-based project management frameworks featuring identification of uncertainties, creation of risk registers, and both qualitative and quantitative assessments.

The MBTA has assessed potential risks and developed mitigation strategies for the Project as part of moving design forward through preliminary design:

- Cost Overruns: **Low Risk**. In the unlikely event that there are cost overruns, a contingency of 25 percent of the construction costs has been applied to the budget for unpredictable circumstances that could arise during construction of the Project.
- Environmental Uncertainties: **Low Risk.** A CE determination is expected due to the Project being a minor rail addition, as defined in 23 CFR § 771.116(c)(12). Environmental documentation will be submitted for approval in advance of the completion of the final design report and construction.
- Real Estate Acquisition: **Low Risk.** No ROW is required to facilitate construction of the Project as it is fully within MBTA-owned ROW.

D. Conformance to Federal Requirements for Project Progress Reporting

The MBTA will comply with all USDOT reporting requirements, detailed in 2 CFR 200.301 and 49 USC 24407(f), including quarterly progress reports, federal financial reports, interim and final performance reports, and all applicable auditing, monitoring, and close-out requirements. Included in the reporting will be performance measures mutually agreed upon by USDOT and the MBTA.

XII. APPENDIX ITEMS

A. Project Specific Terms and Conditions, Attachment 2, FRA
B. Corridor Identification Documentation
C. Letters of Support
D. FRA Grade Crossings
E. Environmental Compliance Documentation
F. MBTA Funding Commitment Letter
G. Technical Qualifications of Key Personnel
H. Benefit-Cost Analysis Technical Memorandum